REMARKS

Claims 1-20 were pending and rejected in the above-identified patent application. Claims 1, 10, 15 and 17 are being amended. Claims 1-20 remain pending. Reconsideration of the claims as amended is respectfully requested.

Before discussing the rejections, a brief review of an embodiment of the invention is helpful. A system architecture includes a remote copy system comprising a primary storage system and a secondary storage system, connected together via a plurality of networks. The system enables selecting one of the networks based on a user-defined policy, e.g., restrictions and/or conditions. Users can define a desired policy with the primary storage system. When the primary storage system sends data to the secondary storage system, it selects one of the networks based on the policy.

In paragraphs 2-8, the Examiner rejected claims 10-13 and 16 under 35 USC § 102 as unpatentable over Yannai. Yannai discloses a remote data mirroring storage system, which includes a single data link therebetween. However, independent claim 10 as amended requires, "specifying a first network to be used for transferring remote mirror copy data from the primary storage volume to a secondary storage volume" and "specifying a second network to be used for transferring the remote mirror copy data from the primary storage volume to the secondary storage volume." The Examiner cites col. 3, lines 32-34 to illustrate the second network as claimed. Col. 3, lines 32-34 merely states, "In the synchronous mode, data on the primary (R1) and secondary (R2) volumes are always fully synchronized at the completion of an I/O sequence." While Yannai's statement indicates that the Yannai system possibly enables bi-directional communication, the statement does not illustrate two networks. Both the first network and the second network of the method of claim 10 must enable data communication in the same direction, i.e., "from the primary storage volume to the secondary storage volume."

Further, claim 10 as amended requires, "specifying a first-network-based constraint for said first network" and "transferring said remote mirror copy data using said first network when

conditions in said first network are in accordance with said first-network-based constraint, otherwise transferring said remote mirror copy data using said second network." The Examiner cites col. 46, lines 35-40 and col. 17, lines 29-36 to illustrate the claimed constraint. However, this language is referring to a parameter called "Synch Direction Init", a parameter which defines the direction on the single data link the data is to be synchronized. Yannai does not teach using a constraint to determine whether the remote copy event should occur over a first network or over a second network, as claimed.

Also, Applicant has amended claim 10 to include the limitation of claim 15. Accordingly, the rejection of claim 15 is being addressed here. In his rejection of claim 15, the Examiner notes that Yannai does not disclose making the first network higher priority than the second network. The Examiner then suggests that Majd discloses a first network of higher priority than a second network and that one skilled in the art would know to combine these references. Applicant respectfully submits that the Examiner's understanding of Majd appears incorrect. Majd teaches a system for prioritizing packets (not networks) over a single long-haul optical network. For example, Majd states, "each packet increasing in value as it nears the ultimate destination." [See abstract]. In other words, Majd does not teach network priority, but instead teaches packet priority. Claim 10 as amended now requires at least two networks, each having a different priority.

Further, nothing in Majd motivates the combination into a remote copy system. Similarly, nothing in Yannai suggests a need for multiple networks of different priority. Accordingly, since the references provide no motivation for their combination, Applicant respectfully submits that a prima facie case of obviousness has not been established.

For at least these reasons, Applicant respectfully submits that neither Yannai nor Yannai in view of Majd anticipates or renders obvious claim 10, as amended. Further, since claims 11-13 and 16 depend from claim 10, applicant respectfully submits that neither Yannai nor Yannai in view of Majd anticipates or renders obvious dependent claims 11-13 and 16, for at least these reasons, also. Applicant respectfully requests the Examiner to withdraw the section 102

rejection of claim 10-13 and 16 (and request the Examiner not to repeat the 103 rejection previously associated with claim 15, now incorporated into claim 10).

In paragraphs 9-11, the Examiner rejected claim 14 under 35 USC § 103 as obvious over Yannai in view of Schwering. The Examiner notes that Yannai does not disclose that the first network is a public network and that the second network is a private network. The Examiner then argues that Schwering discloses a first network that is a public network and a second network that is a private network. Although Schwering teaches public and private networks for data routing, nothing in Schwering teaches a motivation to put its public and private network routing methods into a remote copy mechanism. Similarly, nothing in Yannai teaches a need for public and private networks in its remote copy system. Accordingly, since these references do not provide any motivation for their combination, Applicant respectfully submits that a prima facie case of obviousness has not been established.

Further, claim 14 depends from claim 10. Accordingly, claim 14 also requires that the system utilize a network-based constraint to determine whether to use the first or the second network, as discussed above with reference to claim 10. And, accordingly, claim 14 also requires that the first network be higher priority than the second network.

For at least these reasons, Applicant respectfully submits that claim 14 is patentable over Yannai in view of Schwering.

In paragraphs 12 and 13, the Examiner rejected claim 15 under 35 USC § 103 as obvious over Yannai in view of Majd. The original limitation of claim 15 has been addressed with reference to claim 10. Further, claim 15 has been amended such that it no longer includes its original limitation. For at least these reasons, Applicant respectfully submits that claim 15 is patentable over Yannai in view of Majd.

In paragraphs 14-24, the Examiner rejected claims 1-9 and 17-20 under 35 USC § 103 as obvious over Beardsley in view of Yannai. The Examiner notes that Beardsley does not disclose

a primary storage volume and a secondary storage volume for storing a remote mirror copy of the data. Beardsley discloses a remote copy system comprising a primary storage controller and a secondary storage controller. Both the primary and secondary storage controllers have a plurality of ports to be used for establishing paths between the primary and secondary storage controllers. When the primary storage controller receives a write I/O request, the write data is transferred to the secondary storage controller using a first available path.

The examiner refers to col. 10, L. 48-57, as it mentions "role." Col. 10 L. 48-57 states,

> "Modifying the link-level facilities to have an ability to dynamically (electronically versus manually) assume either the role of channel link-level facility or control unit link-level facility provides flexibility and reduces a number of required communication links as described herein. When link-level facilities are allowed to assume the dual roles it becomes necessary to determine, within the ESCON facility, which role each link-level facility is assuming. The role that a link-level facility assumes is determined on a logical path basis. Establishing logical paths between storage controllers is accomplished with a combination of an Establish Logical Path (ELP) link-level frame and a device level control frame for indicating that the logical path supports peer-to-peer protocols."

The "role" in Beardsley indicates that the port of the storage system can be used as either the channel link-level facility or the control link-level facility. When a port is configured as the control link-level facility, it is used to connect with the host. When a port is configured as the channel link-level facility, it is used to connect the primary storage system with the secondary storage system.

Claim 1 requires "a plurality of ports, providing switch-able connection from said first storage system via a plurality of networks to said second storage system." Similarly, claim 17 requires "the secondary storage being coupled to the primary storage via a plurality of networks." Neither Beardsley nor Yannai teaches a plurality of networks coupling a first storage volume to a second storage volume that is remote from the first storage volume.

Further, claim 1 requires "wherein said processor selects at least one of said plurality of ports to send data from the first storage system to the second storage system, said selection based upon a comparison of at least one condition in said plurality of networks against at least one user

provided policy." Similarly, claim 17 requires "monitoring at least one condition in the plurality of networks", "comparing said at least one condition against at least one user provided policy", and "selecting at least one of a plurality of ports connected to said plurality of networks in accordance with said comparison." Neither Beardsley nor Yannai teaches examining at least one condition of the network as affecting the selection of one of a plurality of networks. Further, neither Beardsley nor Yannai teaches comparing the at least one condition against a user-defined policy, wherein the user-defined policy defines the selection of one of the plurality of networks for transferring the remote mirror data. Beardsley merely teaches to change the role of the network from a control link-level facility to the channel link-level facility. This is not the same as network selection.

As stated above with reference to claim 10, Yannai also does not teach plurality of networks coupling a first storage to a second storage nor a network-based condition for selecting one of the plurality of networks based on the condition.

Still further, Applicant has amended claim 1 and claim 17 to require that the plurality of networks include a first network and a second network such that the first network is higher priority than the second network. As stated above with reference to claim 10, neither Yannai nor Majd teaches such limitation. Further, Beardsley does not teach such limitation.

Accordingly, Applicant respectfully submits that, for at least these reasons, claim 1 and its dependent claims 2-9 and claim 17 and its dependent claims 18-20 are patentable over Beardsley in view of Yannai.

If the Examiner has any questions, he is invited to contact the undersigned.

Respectfully submitted,

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